



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/524,133

02/11/2005

Gotz Peter Schindler

13156-00005-US

2461

30678 7590 10/04/2007
CONNOLLY BOVE LODGE & HUTZ LLP
1875 EYE STREET, N.W.
SUITE 1100
WASHINGTON, DC 20036

EXAMINER

BULLOCK, IN SUK C

ART UNIT

PAPER NUMBER

1764

MAIL DATE

DELIVERY MODE

10/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,133

Applicant(s)

SCHINDLER ET AL.

Examiner

In Suk Bullock

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 10, and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by FR 2748021-A1 (hereinafter "FR").

The FR reference discloses an isothermal method for the catalytic oxidative dehydrogenation of paraffinic hydrocarbons (e.g., propane) to the corresponding monoolefins in the presence of a supported CrO₃-based catalyst. The supported catalyst is present as particles of diameter 20 microns to 10 mm, which may be mixed with a diluent such as steatite or any other inert material of low surface area. The process is conducted in a tubular reactor. See the entire the English summary of the reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1764

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,187,985 to Le Peltier (hereinafter Le Peltier") in view of FR 2748021-A1 (hereinafter "FR").

Le Peltier discloses a process for dehydrogenating alkanes to the corresponding olefins in the presence of a catalyst comprising at least one support (i.e., alumina, zirconia), at least one metal from group VIII, at least element selected from germanium, tin, lead, rhenium, gallium, indium and thallium and at least one alkali or alkaline earth

element. See col. 2, lines 1-23. Le Peltier, also, discloses carrying out the process in an isothermal tube reactor (col. 5, lines 65-67).

Le Peltier fails to disclose a catalytically inactive, inert diluent material.

The FR reference discloses an isothermal method for the catalytic oxidative dehydrogenation of paraffinic hydrocarbons (e.g., propane) to the corresponding monoolefins in the presence of a supported CrO_3 -based catalyst. The supported catalyst is present as particles of diameter 20 microns to 10 mm, which may be mixed with a diluent such as steatite or any other inert material of low surface area. The process is conducted in a tubular reactor. See the entire the English summary of the reference.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Le Peltier by employing a catalytically inactive, inert diluent material such as steatite because the use of steatite in the isothermal dehydrogenation process the diluent material reduces the formation of hot spots along the catalyst bed (page 6, lines 8-14).

It is acknowledged that FR does not disclose the specifically claimed diluent as called for in claim 2. However, since FR discloses any other inert material of low surface area may be employed in the process, it would have been obvious to one having ordinary skill in the art to have included any effective diluent which meets the requirements for a diluent material as disclosed by the reference including those listed in the claim.

The limitation of claim 4 is met by the FR reference disclosure of a low surface area.

Since the FR reference discloses steatite which is one of the claimed diluent, it is expected that the steatite in the reference would have similar thermal conductivity as called for in claim 5.

With regard to the space velocity as called for in claim 6, it would have been obvious to one having ordinary skilled in the art to have determined the most effective space velocity through routine experimentation in the absence of a showing of criticality. In re Woodruff, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

With regard to the limitations recited in claims 7 and 8 directed to the shape and size of the diluent and void fraction respectively, it is within the level of one having ordinary skill in the art to have determined the most effective shape and size and packing of the diluent in the catalyst bed which would lead to optimum process.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1764

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

J. Bullock
I.B


GLENN A. CALDAROLA
PRIMARY EXAMINER
~~GROUP 1100~~
TC1700